1987

Predicting Success in a Vocational Rehabilitation Program for Chronic Psychiatric Patients

Mary A. Yerkes
Loyola University Chicago

PREDICTING SUCCESS IN A VOCATIONAL REHABILITATION PROGRAM FOR CHRONIC PSYCHIATRIC PATIENTS

by

Mary A. Yerkes

A Dissertation Submitted to the Faculty of the Graduate School of Loyola University of Chicago in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

APRIL

1987

ACKNOWLEDGEMENTS

I first of all gratefully acknowledge the help of my dissertation committee. My director, Dr. Al DeWolfe provided valuable and practical suggestions as well as much-appreciated support thoroughout all phases of this project. Drs. James Johnson and John Shack were also most generous with their time and skill. Their careful and thoughtful input is most appreciated.

This project would not have been possible without the cooperation of the Thresholds staff. My thanks go to Dr. Jerry Dincin, Executive Director, for giving his approval to my work there. Rose Jusko of the research department was most helpful with some of the practical matters of data collection. In particular, I am most grateful to Dr. Judith Cook, Research Director, for her unfailing cooperation, helpful suggestions and general willingness to "smooth the way" for me at Thresholds.

The staff of Loyola's Academic Computing Services, particularly Scott Brown at Lake Shore and Jack Corliss and Shobha Srinivasan at Maywood deserve thanks for their advice and assistance. Maggie Melville of the psychology department was helpful in many ways.

Finally, I want to thank my family for their help. My parents Martin and Helen Brennan have believed in me and encouraged me from the beginning. My husband, Ken Yerkes has provided me with the loving sup-

port and the occasional nudges I needed to see this project through to completion. To all those members of the Brennan and Yerkes family whose loving care of my son Daniel gave me the time and peace of mind to work on this project I am deeply grateful.

VITA

The author, Mary Angela Yerkes was born in Evergreen Park, Illinois on August 17, 1958 and is the daughter of Martin and Helen (Gavin) Brennan. She grew up on the southwest side of Chicago.

Her elementary education was obtained in the Chicago parochial school system, and her secondary education at Mother McAuley Liberal Arts High School. In 1980 she earned her Bachelor of Arts Degree from Loyola University of Chicago, with majors in Psychology and English.

In September of 1980 the author entered the graduate program in clinical psychology at Loyola and completed her Master of Arts degree in 1983. She completed a two-year clinical placement at the Loyola Day School and Charles Doyle Child Guidance Center of Loyola University. She also completed a year-long externship at the Nicholas J. Pritzker clinic of Michael Reese Hospital and Medical Center. In 1985, she completed her clinical internship in the Department of Psychiatry at Illinois Masonic Medical Center.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The recent trend in treating the chronically mentally ill patient has been toward earlier discharge from hospital settings and increased efforts to rehabilitate the patient and reintegrate him or her into the community. One of the better known models for psychiatric rehabilitation is the Fountain House model. Established in New York in the 1940's, Fountain House began as a social club for former psychiatric patients. In the 1950's the National Council of Jewish Women lent their support to the cause of ex-psychiatric patients and were instrumental in setting up several rehabilitation facilities across the nation, one of which was Thresholds in Chicago (Dincin, 1975).

Based on the Fountain House model of psychiatric rehabilitation (Beard, Propst & Malamud, 1982) Thresholds offers programs in five main areas: 1) prevention of rehospitalization; 2) vocational adjustment; 3) social adjustment; 4) independent living; and 5) education (Dincin, 1975).

Continued financial support of such comprehensive rehabilitation programs depends, of course, on continued research and documentation of their success. One problem in such research is how one defines success. Does success mean that the former patient gets a job and lives independently or is it enough if he or she stays out of the hospital? The multiplicity of outcome criteria used in rehabilitation research makes it

difficult to compare the effectiveness of different programs and techniques (Anthony, Buell, Sharratt & Althoff, 1972).

Two outcome criteria that tend to be seen as the most promising and indispensable areas for research are the effects of rehabilitation on 1) employment and 2) patterns of rehospitalization or recidivism (Anthony et al., 1972; Mosher & Keith, 1979; Turkat & Buzzell, 1983).

Since hospital costs represent 70% of the total treatment costs to society (Kiesler, 1982) it it easy to see why recidivism patterns are important criteria of the success of rehabilitation programs. Programs that significantly decrease recidivism will naturally be cost-effective. Research findings suggest that comprehensive rehabilitation facilities do indeed have a significant impact on recidivism (Beard, Malamud & Rossman, 1978; Dincin & Witheridge, 1982).

The vocational component of rehabilitation programs, provided it is successful in reaching its goal, provides certain financial benefits to society. The amount of money spent on rehabilitating former patients to the point where they can hold jobs and become self-sufficient is well spent if those people no longer have to collect Social Security Disability Insurance (SSDI) or welfare, and eventually, may become taxpayers themselves.

In terms of benefit to the individual, there are surely some psychological benefits to working. Unemployment has been found to be associated with lower levels of mental health in all types of people (Banks & Jackson, 1982; Kemp & Mercer, 1983) but particularly in the severely physically or psychologically disabled.

Working, on the other hand, provides one with 1) economic freedom, 2) an outlet for physical and mental energy and means of improving one's skills, 3) variety in one's day, 4) temporal structure (i.e., divides one's time into segments with built-in structure and goals, 5) social contact, and 6) enhancement of identity and self-esteem as one who fills a role in society and therefore "fits in" (Warr, 1982). All of this has been found to decrease psychopathological symptoms (Jacobs, Kardashian, Kreinbring, Ponder & Simpson, 1984).

It is important for chronic patients to receive vocationally rehabilitative services because they do face difficulty in the market place. Employers may be leery of hiring them, fearing them undependable and fragile. They may blame them for their psychiatric difficulties. The patients themselves tend to lack self-confidence as well as references and a work history (Beard et al., 1982; Long & Runck, 1983).

Studies of the success rate of vocational rehabilitation programs yield mixed results. When their results are compared to the base rate of employment in the mentally ill population as a whole (estimated by Anthony, Cohen & Vitalo, 1978 to be between 10% and 20%) it looks as if vocational rehabilitation programs are successful (Bond, Dincin & Setze, 1983; Jacobs et al., 1984; Turkat & Buzzell, 1983). However, when compared to employment rates of patients involved in minimum treatment controls (receiving some services but no vocational programming) some studies have shown no difference (Bond et al., 1983; Griffiths, 1974).

An assumption of the present study is that vocational rehabilitation programs for the mentally ill show enough potential for success to warrant further study. The focus is not on whether or not the particu-

lar program being studied is successful or not successful, but with whom it is most successful, i.e., identifying those client variables which are most related to success in a vocational program.

The purpose of the present study is to analyze the relationship between patient demographic characteristics, work skills and success in a comprehensive vocational rehabilitation program for chronic psychiatric patients. This information should prove useful in determining which patients are most likely to benefit from such a program. In addition, it should assist those who work in the vocational rehabilitation field in determining which job skills they might help their clients develop in order to maximize their chances for vocational success. Finally, it should hopefully provide the staff of the rehabilitation facility being studied with information about the utility of their situational work ratings.

CHAPTER II

REVIEW OF RELATED LITERATURE

The criteria used to define vocational success varies from study to study. Stotsky and Weinberg (1956) used regular work assignment in or discharge from the hospital as their operational definition of success. Most researchers are a bit more stringent in their criteria. A few studies compared "successful" closings (of cases in a hospital or rehabilitation program) to "unsuccessful" closings (Goss & Pate, 1967; Worrall & Vandergoot, 1980; 1982). Successful closing geneally means closed with a job. Tessler, Miller & Rossi (1984) used case managers' ratings of the vocational adjustment of their clients in a general support program (as compared to that of others in the community). Tessler and Manderscheid (1982) used the more objective criteria of whether or not the person worked and was paid, but still measured success while the person was involved in a rehabilitation program (although it was not a vocational rehabilitation program).

The majority of studies, however, use the patient's employment status at follow-up as their outcome measure. The follow-up period varies widely from less than three months (Distefano & Pryer, 1970; Ellsworth, Foster, Childers, Arthur & Kroeker, 1968; Ethridge, |968; Lowe, 1967; Miskimins, Wilson, Berry, Oetting & Cole, 1969; Wilson, Berry & Miskimins, 1969), to six months to a year (Anthony & Buell, 1974; Berry & Miskimins, 1969; Bidwell, 1969; Buell & Anthony, 1973; Cheadle, Cush-

ing, Drew & Morgan, 1967; Cheadle & Morgan, 1972; Connors, Wolkon, Haefner & Stotsky, 1960; Green, Miskimins & Keil, 1968; Griffiths, 1974; Gurel & Lorei, 1972; Hall, Smith & Shimkunas, |966; Lipton & Kaden, 1965; Lorei, 1967; Lorei & Gurel, 1973; Sturm & Lipton, 1966; Taylor, 1963; Walker & McCourt, 1965; Watts, 1978; Watts & Bennett, 1977) to two or three years (Douzinas & Carpenter, 1981; Moller, von Zerssen, Eilert & Wuschner-Stockheim, 1982; Olshansky, Grob & Ekdahl, 1960; Schwartz, Myers & Astrachan, 1975; Strauss & Carpenter, 1972; 1974).

Studies vary not only in the length of the follow-up periods, but also in the stringency of their criterion of success. Several studies used a dichotomous classification of success or non-success based on whether or not the person meets certain requirements. In some cases, all that is required is that the person has worked at some point during the follow-up period (Bidwell, 1969; Lowe, 1967; Olshansky et al., 1960). Some require that he or she be actually working at follow-up (Douzinas & Carpenter, 1981; Griffiths, 1974; Watts, 1978). Some studies go further than that, requiring that the work be full-time (Ellsworth et al., 1968; Sturm & Lipton, 1966) or paid (Watts & Bennett, 1977) or demanding that the person have worked a particular length of time during the follow-up period (Berry & Miskimins, 1969; Distefano & Pryer, 1970; Ethridge, 1968; Miskimins et al., 1969; Wilson et al., 1969). Many studies even require the person to have worked continuously throughout the follow-up period (Anthony & Buell, 1974; Buell & Anthony, 1973; Cheadle et al., 1967; Cheadle & Morgan, 1972; Connors et al., 1960; Griffiths, 1973; Hall et al., 1966; Taylor, 1963; Walker & McCourt, 1965). Not surprisingly, the more stringent the criteria for

vocational success, the lower the percentage of subjects who achieved it.

The studies cited thus far have, for the most part, categorized subjects as "successful" or "unsuccessful" and compared them on a variety of measures. However, a few studies used such continuous outcome variables as the percentage of time employed (Gurel & Lorei, 1972; Lorei & Gurel, 1973; Strauss & Carpenter, 1972; 1974) or level of earnings (Lipton & Kaden, 1965). In these studies, a person is not categorized as "successful" or "unsuccessful", but rather, he or she reaches a particular level of achievment. These differences in outcome criteria should be kept in mind when reviewing the literature in this area.

Turning to predictor variables, research findings on the vocational functioning of the severely psychiatrically disabled which are relevant to the present study can be roughly divided according to whether they are concerned with demographic or clinical variables. Those that look at demographic variables include various personal characteristics of subjects such as age, sex, race, etc., and information about their psychiatric and employment histories. Clinical variables would include such factors as performance in work training and social settings and measures of intelligence and personality traits.

The demographic variable of age, when used to predict vocational success yields mixed results. Most studies (Buell & Anthony, 1973; Douzinas & Carpenter, 1981; Ethridge, 1968; Goss & Pate, 1967; Green et al., 1968; Griffiths, 1974; Sturm & Lipton, 1966; Tessler et al., 1984; Wilson et al., 1969) find no significant effect for age. A few studies do find age to be a significant predictor of vocational success, but the

direction of the relationship varies. Hall et al. (1966) found age to be significantly positively related to success. Others (Bolton, 1979; Lorei & Gurel, 1973) found age to be negatively related to vocational success.

Studies of both the very young and very old chronically disabled suggest that both groups have their own unique problems in adjusting to the community and the working world. Older patients, not surprisingly, tend to have more physical problems and less education than other age groups (Growick & McMahon, 1983). Young adults have been found to be widely represented in that group of patients referred to as "difficult" or "troublesome". They are highly mobile and unaffiliated and tend to use psychiatric services in a "revolving door" fashion. They are generally more inclined to use street drugs than their older counterparts (Bachrach, 1982). All of this would suggest that it is not age itself, but rather other characteristics sometimes associated with age, which might have an effect on vocational outcome.

The variable of gender also yields mixed results. The vocational literature on "normal" subjects regularly yields differences between men and women in terms of occupational attitudes and preferences. In general men are seen as paying more attention to pay and career advancement while women are seen as being more concerned with the interpersonal aspects of their jobs and with performance of useful functions (Bartol & Manhardt, 1979; Gurin, 1970; Schuler, 1975). However, these differences are not always found, particularly when men and women are performing the same jobs (Deaux, 1979; Deaux & Ullman, 1983). Sex differences are not seen when minority subjects are used (Brief & Aldag, 1975). It is

assumed that these differences are largely due to patterns of socialization and a long tradition of lower status and lower pay for women. Furthermore, it seems likely that disabled women are subject to the same influences as their nondisabled cohorts (Vash, 1982).

For the most part, sex is not found to be a significant predictor of vocational success among the psychiatrically disabled (Buell & Anthony, 1973; Ethridge, 1968; Green et al., 1968; Wilson et al., 1969; Worrell & Vandergoot, 1980, 1982). One study has found greater vocational success in females (Tessler et al., 1984) but this seems to be an isolated finding. In this study, the outcome data was based on ratings made by case managers. Perhaps the raters had lower vocational expectations for females than for males, and therefore tended to rate females as better adjusted for showing the same level of success as males. For the most part, the literature does not suggest that gender alone is a good predictor of vocational success in the psychiatrically disturbed.

The same seems to be true for race. Buell and Anthony (1973) found a tentative effect for race, with whites showing greater vocational success, while Douzinas and Carpenter (1981) found a positive effect for blacks. Other studies (Lorei & Gurel, 1973; Tessler et al., 1984) suggest no relationship between race and vocational success.

A number of studies have considered the effects of the patients' living situations: are they married?, where do they live? and how are they supported?. Several studies found that married people have better vocational outcomes (Douzinas & Carpenter,1981; Hall et al., 1966; Lorei, 1967; Olshansky et al., 1960; Tessler et al., 1984; Wilson et al., 1969). As usual though, there are studies that do not confirm

these findings (Goss & Pate, 1967; Green et al., 1968). In very disturbed populations, it can be difficult to find more than a very few married subjects. Regardless of the quality of the relationship, marriage suggests more relatedness than the typical chronic schizophrenic patient displays. For this reason, there is logic to the finding that married people tend to be more successful; they are probably less isolated, and more willing to interact. Even more importantly, the mate very likely provides some degree of support, and family and community support is widely acknowledged to be important in patient recovery (Garrison, 1978; Goldstein & Caton, 1983; Parks & Pelisuk, 1984; Roessler & Bolton, 1984).

The person's living arrangement is another potential source of support. Also, a person's living situation can say a great deal about his or her level of independence which, assumedly, relates in some way to vocational success. Lamb and Goertzel (1972) find better follow-up outcomes (including vocational outcomes) for ex-patients who live alone or with family or friends than for those who live in sheltered care. Douzinas and Carpenter (1981) found that those patients who lived anywhere but with their parents were more likely to be employed or involved in a vocational training progaram. Acharya, Ekdawi, Gallagher and Glaister (1982) also reported poorer vocational outcomes for those day-hospital patients who lived in the parental homes. However, Goldstein and Caton (1983) point out that it is not the type of living arrangement which predicts successful adjustment, but the socio-emotional characteristics of the environment (namely, to what degree is it supportive or stressful). For this reason, one might expect the effects of living

arrangement on vocational outcome to vary: one patient living with family might receive support and encouragment while another is trapped in a pathological overly-dependent situation. These factors can be difficult to assess.

Wilson et al. (1969) found a tendency for those patients who are not on welfare to do better vocationally. Arzin, Flores and Kaplan (1975) in describing a "Job Club" for rehabilitation clients say that those who were on unemployment were excluded, as preliminary studies showed they made less effort. However, few references can be found in the literature relating source of income to vocational outcome.

Education has been used as a potential predictor of vocational outcome several times. Hall et al. (1966) did find post-high school education to be significantly positively related to vocational outcome. Their subject population consisted of acute schizophrenic inpatients; in a more chronic type of population it might be difficult to find subjects who have had the opportunity for such schooling. In fact, several studies (Buell & Anthony, 1973; Douzinas & Carpenter, 1981; Lipton & Kaden, 1965; Sturm & Lipton, 1967; Wilson et al., 1969) do not find education to be significantly related to vocational outcome. The related variable of social class also does not tend to be a significant predictor of vocational success (Hall et al.).

The presence of medical problems or somatic complaints (genuine or delusional), when it is considered in studies of psychiatric patients, tends to be associated with poorer vocational outcomes (Strauss & Carpenter, 1972; Tessler & Manderscheid, 1982; Tessler et al., 1984). On the other hand, good physical health has been found to enhance the voca-

tional outcome of former vocational rehabilitation clients (Bolton, 1983).

While most of the demographic variables mentioned thus far have yielded mixed results, one would expect more clear-cut findings when hospitalization history is used as a predictor. This variable can be approached in a variety of ways: voluntary vs. nonvoluntary admissions; amount of time hospitalized; and a dichotomous classification based on whether or not the person has spent a given amount of time in the hospital during a particular period of time. All of these were significantly related to global functioning, but none were significant when used to predict performance specifically on job settings. Lorei (1967) looked at whether the person was hospitalized in the two years prior to the current admission and the percentage of subjects' adult life spent in the hospital. The latter was cross-validated as a significant predictor of vocational success: the smaller the percentage, the better the outcome. Olshansky et al. (1960), using actual amount of time spent in the hospital found it to be negatively related to vocational success (the conclusions in this study were not based on any statistical tests). Green et al. (1968) and Wilson et al. (1969) also found that the less treatment subjects had previously undergone, the better their vocational outcomes. However, Buell and Anthony (1973) did not get significant results with either number of hospitalizations or length of last hospitalization. Lipton and Kaden (1965) found no relationship between number of admissions and level of employment earnings at follow-up.

Summarizing the data on hospitalization history, it appears that the findings are, again, mixed. One would logically assume that the more time a person spends in the hospital, the more chronic and severe his or her illness is likely to be, and hence, the less the chance for future successful vocational functioning. This assumption is not consistently supported. Perhaps this is partly due to differences in the ways patients use their time in the hospital; some may find ways to productively prepare for future employment, while others may not.

Another reason why hospitalization history may not pan out consistently as a significant predictor of vocational outcome is that it assumes that the severity of the psychiatric condition is a good predictor of vocational outcome. This is not consistently found to be true. From their comprehensive review of the literature relating to the vocational capacity of chronic psychiatric patients, Anthony and Jansen (1984) conclude that psychiatric symptomatology is a poor predictor of future work performance and that diagnostic category is also a poor predictor of future work performance.

These conclusions were based on the findings of a number of studies. A few did obtain significant results when diagnosis was used as a predictor variable. Being diagnosed with some form of schizophrenia, as opposed to other types of conditions has been associated with poorer outcomes (Buell & Anthony, 1973; Olshansky et al., 1960; Tessler et al., 1984); Acharya et al., (1982) found that day hospital patients diagnosed as having personality disorders received the most complaints about their behavior on the job. Surprisingly, they found that schizophrenics were more successful than a combined grouping of affective, personality,

organic and neurotic disorders. Wilson et al. (1969) found that those with neurotic as opposed to psychotic conditions were more likely to hold on to jobs in which they had been placed. Hall et al. (1966) found degree of illness to be related to employment at follow-up, but do not provide information about how they derived the "degree of illness" score.

More commonly, however, studies have not found diagnosis to be a significant predictor of vocational success (Distefano & Pryer, 1970; Douzinas & Carpenter, 1981; Ethridge, 1968; Goss & Pate, 1967; Hall et al., 1966; Lorei, 1967; Sturm & Lipton, 1967; Taylor, 1963; Watts & Bennett, 1977).

Closely related to the variable of diagnosis is that of type of psychiatric symptomatology manifested by patients. Again, very few studies do find this to be a significant predictor of vocational outcome, while the majority do not. One study that got significant results (Wilson et al., 1969) found depressive and/or aggressive symptoms to be positively related to vocational outcome symptoms. Most symptoms, including hallucinations and anxiety were not found to be related to outcome.

Ellsworth et al. (1968) included ratings of depression, anxiety, paranoid hostility and deteriorated thought and did not find them to be related to later earnings (their outcome criterion). Green et al. (1968) used placement in a job as their criterion of success and found it unrelated to alertness, orientation or use of defenses. "Most psychiatric variables" (including hallucinations and anxiety) were not found by Wilson et al. (1969) to be significant predictors of the abil-

ity to hold a job. Other studies which have not found psychiatric symptomatology to be related to vocational outcome include Gurel and Lorei, (1972); Moller et al.(1982); Schwartz et al. (1975); Strauss and Carpenter (1972; 1974).

The variable of work history has been a consistently more effective predictor of vocational outcome than most other demographic variables (Anthony & Jansen, 1984). Different measures of work history are used from study to study but the results are strikingly similar; work history is positively related to vocational outcome, as defined earlier.

For example, Lipton & Kaden (1965) used pre-hospital level of earnings as their work history variable and found it to be significantly related to level of earnings one year after their hospital release. Lorei (1967) used the dichotomous variable of whether or not the patient has worked in the recent past and found it to be significantly related to post-hospital stable full-time employment. More commonly, however, researchers tend to use the amount of time a person has worked and/or the stability of his or her work history. Again, the relationships are quite consistent (Anthony & Buell, 1974; Buell & Anthony, 1973; Green et al., 1968; Hall et al., 1966; Lorei & Gurel, 1973; Olshansky et al., 1960; Strauss & Carpenter, 1972; 1974). Only Griffiths (1974) failed to find a significant relationship between work history and later vocational success. His measure of work history was a dichotomous classification of the level of previous employment (skilled or unskilled).

Aside from the Griffiths (1974) study, it seems that there is overwhelming evidence that patients who have been working people before they are hospitalized and/or enrolled in some sort of rehabilitation program are much more likely to be employed in the future.

To summarize the relationship between demographic variables and vocational success of chronic psychiatric patients, the literature suggests the following:

1. There is little support for sex, race, diagnosis or symptomatology as predictors of vocational outcome.
2. There is some evidence that education, age, marital status, living arrangements and hospitalization history are significantly related to vocational success, but the findings are quite mixed.
3. There is very strong evidence that work history, however it is defined, is a strong predictor of later vocational success.

Moving on to more clinical variables, we again find a variety of predictor measures used. Tests of intelligence (WAIS), general aptitude and interests, reading and math comprehension and personality (MMPI and Rorschach) are generally not found to have much value in predicting later vocational success (Bidwell, 1969; Bolton, 1983; Distefano & Pryer, 1970; Goss & Pate, 1967; Griffiths, 1974; Lipton & Kaden, 1965; Lowe, 1967; Sturm & Lipton, 1966; Taylor, 1963).

However, when the tests used are more specifically vocationally related, the results are more promising. The Stotsky-Weinberg Sentence Completion test has been found in three studies to yield positive results (Bidwell, 1969; Connors et al., 1960; Stotsky & Weinberg, 1956). This test (which seems to have fallen into disuse) is made up of items that are specifically vocationally related. Items that emerged in the above-cited studies as significant predictors of vocational outcome include self-reliance, reactions to situations of difficulty, interper-

sonal relationships, ego strength and the overall score. The Miskimins Self-Goal-Other test, which was designed for use with vocational rehabilitation patients, measures discrepancies between the person's self-concept, ideal self-concept and the concept he or she has of how others see him or her. It has been found to be significantly positively related to employment at follow-up (Berry & Miskimins, 1969).

Researchers have found mixed results when using functioning in other areas (i.e., community or hospital settings) to predict vocational functioning. Regarding hospital functioning, Walker and McCourt (1965) found that whether or not the person engaged in work-like activity in the hospital was not related to later employment. Lorei and Gurel (1973) reported a similar finding. In the Walker and McCourt (1965) study, only 26% of those patients who did participate in work activity in the hospital were employed six months after discharge, while 20% of those patients who had not participated were employed at follow-up. It seems fairly clear then, that one cannot predict how a person will do in the workplace by how he or she performed in the hospital.

Various measures have been used to look at community adjustment. They include measures of recidivism, measures of personal adjustment, and measures of social functioning. Tessler and Manderscheid (1982) argue that although the various aspects of community adjustment are interdependent, they are, nevertheless, distinct and separate dimensions of client functioning.

It would be logical to expect a strong negative relationship between recidivism and vocational functioning: after all, how can one work if he or she is in and out of the hospital. Gregory and Downie,

(1968) and Lorei and Gurel (1973) have found a relationship between the two, but the authors do not consider the relationship to be a particularly strong or striking one. Other authors have found no such relationship (Arthur, Ellsworth & Kroelker, 1968; Wessler & Iven, 1970). Apparently there are a good number of people who work between hospitalizations as well as those who do not work, but remain out of the hospital. Maybe work stress is, for many people, a precipitant for hospitalization. These people would be considered to be at a higher level vocationally than those who, for example, stay out of the hospital only by demanding very little of themselves.

Personal adjustment, at least when it is measured by self-report, appears unrelated to vocational success (Bolton, 1974; 1978; Growick, 1979). However, when adjustment is defined in terms of basic living skills (i.e., the ability to fulfill everyday needs) a strong relationship to vocational success was found (Tessler & Manderscheid, 1982).

The relationship between social functioning and vocational functioning seems to be a fairly strong and positive one. Certainly these are two separate dimensions of client functioning: those who are involved in social rehabilitation do not necessarily improve their vocational capacities (Summers, 1981; Wolkon, Karmen & Tanaka, 1971). Yet relationships between these two areas consistently emerge (Tessler & Manderscheid, 1982; Tessler et al., 1984).

It does seem that an ability to "get along" with others significantly enhances one's vocational capacity (Anthony & Jansen, 1984). This conclusion is based on several studies which have found relationships between vocational functioning and getting along with others in

the workplace, as well as more general social functioning. Olshansky et al. (1960) found that those who were "less restricted socially" had better vocational outcomes. Sturm and Lipton (1966) found a positive relationship between voluntary social participation in hospital activities and employment at follow-up. Several other researchers have also reported significant relationships between general social functioning and vocational outcome (Gurel & Lorei, 1972; Miskimins et al., 1969; Strauss & Carpenter, 1974). However Ellsworth et al. (1968) found social contact to be unrelated to follow-up employment. The follow-up period in this study was only three weeks.

A more specific area of social skill, the ability to relate to others on the job, has consistently been found to relate positively to vocational success (Cheadle et al., 1967; Cheadle & Morgan, 1972; Connors et al., 1960; Distefano & Pryer, 1970; Ethridge, 1968; Griffiths, 1973; Watts, 1978; Wilson et al., 1969). Job-related social skills include such things as getting along with co-workers, response to supervision and general ability to cooperate.

A variable that is very closely related to social skills in the work setting but appears to be less widely investigated is the extent to which a patient is able to refrain from bizzare, inappropriate behavior. It makes intuitive sense that this ability would be critical to job success. This ability is not often referred to in the literature, but does appear in the rating form used by Cheadle and Morgan (1972). Called a "socially embarrassing behavior score", this ability to control such behaviors is found to be significantly positively related to vocational outcome.

By far the best clinical predictors of vocational success, according to Anthony and Jansen (1984), are ratings of patient's job skills made by others in a vocational training or work setting. Work skills mentioned can be roughly divided into three areas: interpersonal skills, work readiness skills and work performance skills.

The area of interpersonal skills (i.e., relating to supervisors and co-workers) has already been covered. Work readiness skills would include such variables as initiative, persistence, motivation to work, dependability, flexibility, confidence, attendance and punctuality. These variables indicate a basic level of adjustment to the role of worker; they would be necessary in order to maintain any job, regardless of how skilled or unskilled the person is. All of the above-mentioned variables have been found to be significantly predictive of future vocational functioning (Cheadle et al., 1967; Cheadle & Morgan, 1972; Distefano & Pryer, 1970; Ellsworth et al., 1968; Ethridge, 1968; Friedmeyer, 1985; Green et al., 1968; Griffiths, 1973; Miskimins et al., 1969; Watts, 1978; Wilson et al., 1969).

The third category of job skills mentioned in the literature consists of variables which relate more specifically to how well the person does the job (i.e., work quality and quantity). These variables tend to be less predictive of vocational success. Some studies have found significant positive results for ability to finish the job (Cheadle et al., 1967; Wilson et al., 1969); skillfulness (Distefano & Pryer, 1970; Ethridge, 1968; Griffiths, 1973); speed and judgement (Green et al., 1968); independence and comprehension of instructions (Distefano & Pryer, 1970). Other studies have found task competence (Cheadle & Morgan,

1972; Watts, 1978) and speed (Cheadle et al., 1967; Cheadle & Morgan, 1972) to be unrelated to vocational outcome.

When overall work skill scores are calculated, the total score tends to be predictive of future vocational success (Cheadle et al, 1967; Cheadle & Morgan, 1972; Distefano & Pryer, 1970; Ethridge, 1968; Griffiths, 1973). Many of the individual items on these scales correlate with outcome. However, it it difficult to say which individual items are most predictive, since the strength of the relationship of each individual item to the outcome measure, relative to the other items, varies from study to study.

A final clinical variable which is used in the literature as a predictor of vocational success is the patient's subjective view of himself or herself. This would include such things as self-confidence, realism, the meanings one one attaches to work and the extent to which working is part of one's identity. These variables are more subjective and therefore more difficult to measure than some of the others. Griffiths (1974) did find that self-confidence and the patients' own assessments of their handicaps were predictive of vocational outcome. Bolton (1983) found that optimism regarding one's chances for employment and a tendency to attribute difficulties to the environment rather than one's handicap were related to vocational success.

Studies indicate that psychiatrically handicapped people have particular troubles in their views of themselves as worker. Ciardello and Bingham (1982) suggest that schizophrenic clients, in particular, tend to be less mature careerwise, i.e., they are less able to set realistic career goals and make sensible choices. Florian and Har-Even (1984)

have found that schizophrenic clients attach less value to social mastery than they do to either personal satisfaction or economic concern. This is a problem, first of all, because of the evidence previously cited that social skills are important for vocational success in this population. Also, given the tedium and low-pay of many of the entry-level jobs available to vocational rehabilitation clients, the chief benefit, at first, is likely to be the social contacts the job affords. These studies all suggest vocational counseling to help clients see what they can reasonably expect from their jobs in order to increase satisfaction.

To summarize the effects of clinical variables on vocational outcome, it seems the best predictors are ratings of clients' work skills, particularly interpersonal and work readiness skills, made in job or vocational rehabilitation settings. Social functioning, in particular the ability to get along with supervisors and co-workers, is also significantly positively related to vocational success. The patient's ability to be both realistic and optimistic in setting career goals is positively related as well. Other measures of functioning in the community such as recidivism rate and ratings of personal adjustment are less consistently related to success, and functioning in the hospital appears unrelated to outcome. Standard psychological tests of intelligence and personality functioning are not related to vocational success in chronic psychiatric patients. However, paper and pencil measures that are vocationally related do a somewhat better job of prediction.

After reviewing the literature on vocational rehabilitation of chronic psychiatric patients, Anthony & Jansen (1984) call for further

research on the question of " which of the chronically mentally ill will be most successful in rehabilitation attempts to help them engage in work activity?" (p. 542). As previously discussed, they also note the lack of information on which work adjustment skills are most predictive of vocational success.

CHAPTER III

THE CURRENT STUDY

The present study represents an attempt at further investigation into which demographic and clinical variables may predict success in a particular comprehensive vocational rehabilitation program. The program studied is Thresholds in Chicago. First of all, a variety of demographic variables were analyzed using multiple regression analyses to see if the results match those in the literature. In addition, a variety of clinical variables were analyzed in similar fashion to see if they predict vocational success and to see which are most predictive. These clinical variables consisted of ratings made early in the rehabilitation process by supervisors on the following work skills: attendance; punctuality; initiative; responsibility; flexibility; following directions; persistence; rapport with co-workers; rapport with the supervisor; ability to accept criticism; ability to control inappropriate behaviors; speed; work quality; efficiency; ability to monitor oneself on the job and productivity. Finally, the relationships between demographic and clinical variables were analyzed to see if subjects with particular backgrounds were more likely to exhibit particular work skills.

Success in the present study is specifically defined as success <u>in</u> the vocational program being studied, rather than long-term success. This is somewhat different from most of the studies cited, which use vocational success at follow-up as the outcome criterion. While follow-

up research is certainly valuable, it was felt that it would be interesting to know something more about people's institutional performance. It is important for vocational rehabilitation personnel to know the characteristics of the people who are going to be able to make the best use of their programs in order to make the best use of available resources. Conversely, it is important for such personnel to know which people currently do not tend to do so well in these programs, so that they will know where to put remedial effort and resources. Thresholds puts clients through a series of progressively higher-level vocational steps (with the goal of getting people to the highest level before discharge). It would be interesting to know which clients can achieve this. The outcome variable in this study is not success vs. lack of success, but, rather, the level of success a person reaches. The predictions sought were: "who will get the furthest?".

The present study was planned as an exploratory one; however a few specific hypotheses were advanced:

1. Consistent with the referenced literature, work history is predictive of a significant amount of the variance in work adjustment variables and vocational success.
2. Work history is a more significant predictor of vocational success than age, race or gender.
3. The score derived by summing the work skill variables is predictive of vocational success. Further clarification of which skills are most predictive of vocational success was a major goal of this study, but hypotheses are not stated for specific work skills.

CHAPTER IV

METHOD

THE SETTING

Thresholds is a privately operated psychiatric rehabilitation center in Chicago. Based on the Fountain House model of psychiatric rehabilitation (Beard, Propst & Malamud, 1982), Thresholds offers programs in five main areas: prevention of rehospitalization, vocational adjustment, social adjustment, independent living and education (Dincin, 1982). Clients are referred to as "members" rather than patients. The typical Thresholds member is quite disabled; most have had more than one psychiatric hospitalization. Most carry a diagnosis of schizophrenia, although many are diagnosed with an affective or personality disorder (Bond et al., 1983). For the most part, those whose primary problems are alchohol or drug abuse or severe mental retardation are excluded from participating in the program.

The present study focuses on one of Thresholds' offerings--the vocational rehabilitation program. Members who participate in this program are, first of all, assigned to one of three work crews: the kitchen crew (for teenagers and young adults), the maintenance crew or the clerical crew. The unpaid crew activity takes place in and around the Thresholds building and is the first step toward developing good work habits.

When staff members see that a member is functioning well in crew and is ready to move on, he or she is assigned to a paid group placement. Employers contract with Thresholds to provide a given number of employees to work in such capacities as factory worker or food service. Members work in a group with other Thresholds members and are supervised by someone from the agency. When a member is ready to move on from this level, he or she is assigned to an individual placement. Again, this paid job is obtained through Thresholds, but the worker may be the only Thresholds member at the site. Finally, the ultimate goal is for a member to obtain his or her own job, often with no connection between the employer and Thresholds. The model is for members to move sequentially through the four levels, each one requiring a higher level of ability. Practically speaking however, this does not always occur. Sometimes a member moves right from crew to an individual placement or own job. At times, a member may be moved back to a lower level because of poor performance. Sometimes, particularly with group placements, the job is time-limited from the start, so that members are moved back to crew through no fault of their own. In general, however, the assumption is that someone on a group placement is achieving better than someone on crew, and so forth up the placement ladder.

SUBJECTS

The sample consists of 164 members involved in Thresholds' vocational program (115 male, 49 female). These members entered the program between January 1, 1982 and December 31, 1983 and remained in the program for at least 90 days. Since outcome data was collected in July of

1984, each member had the opportunity to be a part of the Thresholds program for at least six months before his or her progress was assessed.

Originally 233 subjects were considered for the study, as this was the number of people who entered the program during the above-mentioned time period. It was felt, however, that dropouts should be excluded, since it does not seem likely that they had a reasonable chance at vocational success. The criterion of less than 90 days of involvement for dropout status has been used in Thresholds' own in-house research. Of Thresholds dropouts, 40% have their cases closed at intake (Bond et al., 1983). While the current study made no direct comparisons of experimental subjects vs. dropouts, a previous study of Thresholds members concluded that dropouts are demographically similar to continuers (Dincin & Witheridge, 1982).

In the present study, 55 of the original 233 intakes were dropouts, and, therefore, not used in the study. Eight members were dropped because they did not become involved in the vocational aspect of the Thresholds programs, even though they stayed involved in another aspect of the program. Records were unavailalbe on six members. One hundred and sixty four members remained and were the subjects of this study.

Tables 1 and 2 summarize the demographic characteristics of this sample. The ratio of males to females in this study is disproportionately large,(even for Thresholds). The agency normally reports a 60/40 ratio of men to women (Bond et al., 1983), but in this study it is closer to 70/30. It is not clear why this is so, but it is not due to a systematic attrition of females when dropouts are excluded: the male/female ratio in the original 233 is approximately the same.

Table 1

Demographic Characteristics of Sample (categorical variables)

VARIABLE	N	%
SEX		
Male	115	70
Female	49	30
RACE		
White	121	74
Non-white	43	26
MARITAL STATUS		
Never married	144	88
Married or living as married	2	1
Divorced/widowed or separated	18	11
SOURCE OF INCOME		
Job or savings	18	11
Government subsidies	75	46
Family contributions	46	28
Other	15	9
(missing cases)	(10)	(6)
RESIDENCE		
Institution	39	24
Relative's home	83	51
Supervised living arrangement	23	14
Independent residence	18	11
(missing cases)	(1)	(<1)
GETTING HELP IN FINDING A JOB IS PRIMARY REASON FOR COMING TO THRESHOLDS		
Yes	75	46
No	72	44
(missing cases)	(17)	(10)

(continued)

Table 1 (continued)

VARIABLE	N	%
HAS WORKSHOP EXPERIENCE		
Yes	26	16
No	124	76
(missing cases)	(14)	(8)
WORKING AT INTAKE		
Yes	7	4
No	156	95
(missing cases)	(1)	(1)
HAS WORKED IN THE PAST		
Yes	139	85
No	9	5
(missing cases)	(16)	(10)
TIME STATUS OF LAST JOB		
Part-time	60	37
Full-time	76	46
(missing cases)	(28)	(17)
PAY STATUS OF LAST JOB		
Paid	121	74
Volunteer	5	3
(missing cases)	(38)	(23)
REASON FOR LEAVING LAST JOB		
Quit	77	47
Laid off	32	19.5
Fired	34	21
(missing cases)	(21)	12.5

Table 2

Demographic Characteristics of Sample (non-categorical)

VARIABLE	$\bar{X}$	MEDIAN	SD	RANGE
Age	25.67	24.67	6.00	28.00
Grade Level	12.73	12.42	2.85	20.00
Months at longest job	17.87	11.75	20.90	98.00
Months at last job	10.28	4.90	15.89	96.00
Number of hospitalizations	3.63	2.64	3.34	20.00
Total number of months in hospital	8.87	3.93	13.02	84.00
Age at first hospitalization	20.71	20.15	5.01	26.00
Global Assessment Scale Rating	53.52	53.96	7.50	35.00

The racial composition of the population is 74% white and 88% have never been married, which is typical for Thresholds, as is the average age being under 26 (Bond et al., 1983). The mean level of education is the high school degree. Members derive their primary incomes from a variety of sources, but the largest number receive some form of government subsidy, such as welfare or SSDI. The fact that very few live independently, and the mean number of hospitalizations (over three) suggests that this population is quite a disabled one. The mean GAS rating of 53.52 suggests that, at the time they come to Thresholds, members are displaying "moderate" levels of symptoms or are functioning with some difficulty (Endicott, Spitzer, Fleiss & Cohen, 1976).

The employment histories of members in the current study are limited. Only a small percentage are working when they enter Thresholds' program. Most, however, have worked at some point; only nine have never worked at all. While the average number of months at the longest-lasting job is almost 18 months, the median score is under a year. Many members' most stable job lasted only a few months. For most members, their most current job was not their longest-lasting job: the median number of months at members' most recent job was under five.

PROCEDURE

Data for the proposed study was obtained from members' agency records and agency reports. To preserve anonymity, subjects were identified by ID number only. Demographic information was self-report and was obtained from intake forms completed by all members when they first entered the program. The independent demographic variables used in the

study were age, sex, race, marital status, education, type of residence, source of income, work history, hospitalization history and whether getting a job was the primary reason for coming to Thresholds. In addition, a Global Assessment Scale (GAS) score of overall functioning of the person (Endicott et al., 1976) made by the intake worker was used. The GAS is a single rating for evaluating the person during a specified time period. The values range from one (the hypothetically most disabled person) to 100 (the healthiest). Most outpatients tend to be rated between 31 and 70.

The independent variables of work skills were obtained from Job Report Forms, which are completed on each member monthly, by his or her immediate supervisor on crew or placement. Ratings are made on a Likert-type scale and range from 0 (unsatisfactory) to 9 (outstanding).[1] A decision rule of using the last Job Report Form from crew, before the member moved on to any other kind of placement, was imposed. It was felt that this rating took place after the member had become somewhat stabilized in the program, but early enough so that it could be considered a baseline level of his or her work skills.

In another sample of Job Report Forms taken from the same agency, the predictive value of the rating forms completed by Thresholds was found to be better than ratings made at the placement sites. This same study demonstrated good internal consistency and test-reliability for the Job Report Forms (Friedmeyer, 1985).

---

[1] As the form is currently used by Thresholds staff, it consists of five levels. However, since "eyeballing" of the raw data revealed a tendency for some raters to rate members in between two data points, I decided to convert the scale to a ten-point scale, for purposes of this study.

At the time of initial data collection, 58 members had not yet progressed out of crew to any sort of placement. For these members, the last available Job Report Form (from crew) was used.

The main dependent variables in the study were the highest level placement a member obtained (crew, group, individual or own job) and the level of success he or she showed at that level (did he or she leave it for a negative reason, leave it for a neutral reason, keep it, or leave it for a positive reason). Examples of negative reasons would include being fired or rehospitalized. Neutral reasons for leaving a placement or job would include being laid off or the employer's ending the placement for reasons of his own. Examples of positive reasons for leaving a placement or job would include going back to school or getting another job.

One problem with these variables is that Thresholds members rarely follow the model progression step-by-step through the various levels. In many cases, they may move back from a higher level placement to a lower one. If one looks at the highest level of placement achieved, a person who, for example, fails at an individual placement will look the same as one who succeeds. If one looks only at the success of members at their highest level placement, then a person who fails at an individual placement will look worse than one who succeeds at a group placement, but never moved beyond that. In fact, for a member to be given an individual placement, he or she must have been doing reasonably well at a lower level.

This problem was handled, to some extent, by combining highest level placement and degree of success and creating a 10-level variable

called "highest level achieved". Within this variable, failure at a higher level placement is rated slightly better than success at the next lowest level of placement. This was not a perfect solution, but the assumption behind it is that members are moved to a higher level when they have done well at a lower one.

In addition to "highest level achieved", the other dependent variable used, for those members whose cases were closed at the time of data collection, was the dichotomous variable of whether or not they were working at closing and thus can be considered "successfully closed".

STATISTICAL ANALYSIS

Data analysis for this study was done by means of multiple regression and discriminant analyses. Since many of the independent variables used are nominal scale in nature, it was necessary to convert them to "dummy" variables for purposes of data analysis. Dummy variables are "created by treating each category of a given nominal variable as a separate variable and assigning arbitrary scores for all cases depending upon their presence or absence in each of the categories" (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975, p. 374). One category from each nominal variable must be excluded from the regression equation and is called the "reference category". It is the "reference point by which the effects of the other dummies are judged and interpreted" (Nie, et al., 1975, p. 374). For example, for the independent variable of gender, the dummy variable "male" is entered into the equation while female becomes the reference category. Each subject receives a score for male based on whether he or she is male or female. Any results that are found

for "male" are interpreted as being the effects of being male as opposed to female.

This study is exploratory in nature; even the experimental hypotheses do not attempt to causally order the independent variables, but only say that certain ones are likely, based on the literature, to be related to vocational success. For this reason, the stepwise method of variable selection was used. Rather than the experimenter pre-setting the order of entry of variables into the equation, the computer selects the variables and enters them step-by-step in order of their contribution to explaining the variance in the dependent variable. At each step, a variable that has been entered previously may be removed if it, in combination with the other variables, no longer explains a significant amount of variance (Afifi & Clark, 1984).

The level of significance needed in order for a variable to be entered into the equation was set at $p \leq .15$, a value recommended by Bendel and Afifi (1977). The p-to-remove (level of significance at which a variable already entered can be removed) was set at $p \geq .30$ (as per Afifi & Clark, 1984).

There are certain problems with using the stepwise method. Cohen and Cohen (1975) object to it chiefly because they see it as turning responsibility for ordering variables over to a computer, rather than a researcher, but also because there is "serious capitalization on chance" and the "ad hoc order produced from a set of (independent variables) in one sample is likely not to be found in other samples from the same population" (p. 103). For these reasons, subjects were divided into two groups and all regression and discriminant analyses were performed sepa-

rately on each group. Only those variables that cross-validated as significant ($p<.05$) are considered predictors of vocational success. The splitting of the sample was done on the basis on whether members' ID numbers ended in an even or odd number. This is not strictly randomized; however ID numbers are assigned in the order in which members enter the agency and there is no reason to suspect that whether a person has an even or odd ID number is due to any factor other than chance. The number of subjects in each group is fairly even: 80 in one and 84 in the other.

The data analysis was performed as a series of multiple regression equations and discriminant analyses, using only a few independent variables in each. Using too many variables in each equation would diminish the power to the point where no meaningful analysis could be done. Any independent variables that are found to be significant in both samples can then be analyzed together in another multiple regression or discriminant analysis, in order to gauge the order of their importance.

Finally, there is some missing data for almost all variables. This was handled by means of listwise deletion of missing data. This method causes a case to be omitted from <u>all</u> calculations in a given equation if it contains missing data on any variable in the equation. This method does reduce sample size; however it insures that all the computed regression coefficients in each equation are based on the same population. Since the missing data in this study is fairly concentrated by case, the reduction in sample size should not be great enough to cause concern.

CHAPTER V

RESULTS

Table 3 summarizes the frequency of ratings of members' work skills. The average rating score of every skill is approximately five, which is the midpoint of the rating scale and indicates that the member meets expectations. Eyeballing of these results does not suggest that there is much variability in how members are rated from skill to skill, but this will be analyzed further later.

Table 4 summarizes the outcome data. The total number of placements reflects all of the members' placements to date (not just their highest level). As the table shows, there are some members who, at one time or another, are assigned to several placements. For purposes of this study, however, the placement of interest is their highest level one.

In terms of the highest vocational level achieved, the largest single group is made up of those members who never got off crew (over one third of the subjects). On the other hand, there is a respectable showing of people who got their own jobs and either left them for a positive reason or kept them. The third measure of vocational outcome applies to those members whose cases were closed by the time of data collection. Only 70 were closed, most of them without jobs.

Table 5 provides a list and explanation of the predictor and criterion variables used in the multiple regression equations and the

Table 3

Mean Work Skill Ratings*

VARIABLE	$\bar{X}$	MEDIAN	SD	RANGE
Work Adjustment Skills				
Attendance	5.37	5.22	2.25	8.00
Punctuality	5.44	5.27	2.13	8.00
Initiative	5.10	5.08	1.44	8.00
Responsibility	5.38	5.21	1.49	8.00
Flexibility	5.19	5.07	1.27	8.00
Follows directions	5.35	5.16	1.41	8.00
Persistence	5.17	5.09	1.49	8.00
Interpersonal Skills				
Rapport with co-workers	4.93	4.97	1.30	8.00
Rapport with supervisor	4.99	5.01	1.29	8.00
Accepts cricicism	4.91	4.97	1.09	6.00
Control of inappropriate behavior	5.08	5.07	1.24	6.00
Work Performance Skills				
Speed	5.18	5.07	1.29	7.00
Work quality	5.46	5.22	1.35	8.00
Efficiency	5.29	5.15	1.41	8.00
Independence	5.20	5.11	1.66	8.00
Ability to monitor self	5.27	5.10	1.41	8.00
Productivity	5.27	5.14	1.46	8.00

*Note. From 1 "unsatisfactory" to 9 "outstanding."

Table 4

Highest Vocational Level Achieved

		N	%
00	Never got off crew	58	35
01	Got group placement - left for negative reason	11	7
02	Got group placement - left for a neutral reason	13	8
03	Got a group placement - left it for a positive reason or kept it	29	18
04	Got an individual placement - left for a negative reason	4	2
05	Got an individual placement - left it for a neutral reason	0	0
06	Got an individual placement - left it for a positive reason or kept it	12	7
07	Got own job - left it for a negative reason	8	5
08	Got own job - left it for neutral reason	1	1
09	Got own job - left it for a positive reason or kept it	24	15
	(missing cases)	(4)	(2)

(continued)

Table 4 (continued)

	N	%
HAD A JOB AT CLOSING		
Yes	12	7
No	58	36
(not closed)	(94)	57
TOTAL NUMBER OF PLACEMENTS		
Group Placements	77	90
0	58	47
1	21	13
> 2	8	5
INDIVIDUAL PLACEMENTS		
0	137	84
1	22	13
2	4	2
> 2	1	1
OWN JOBS		
0	129	79
1	30	18
2	3	2
> 2	2	1

Table 5

List of Variables

INDEPENDENT

Demographic

- Age
- Sex
  - Male
  - (Female is reference category)
- Race
  - Caucasian
  - (Non-caucasian is reference category)
- Marital Status
  - Never married
  - Married or living as married
  - (Separated/widowed/divorced is reference category)
- Income Source
  - Job or savings
  - Government subsidies
  - Family
  - (Other is reference category)
- Grade Level
- Residence
  - Institution
  - With relatives
  - Supervised living
  - (Living independently is reference category)
- Is Help in Getting a Job the Primary Reason for Coming to Thresholds?
  - Yes
  - (No is reference category)
- Number of hospitalizations
- Total months in hospital

(continued)

Table 5 (continued)

Age of first hospitalization

Work History (prior to Thresholds)
Number of months at longest job

Has workshop experience?
Yes
(No is reference category)

Months at Last Job

Pay status of last job
Paid
(Volunteer is reference category)

Time status of last job
Part-time
(Full-time is reference category)

Reason for leaving last job
Quit
Laid off
(Fired is reference category)

Has work experience
Yes
(No is reference category)

Work Skills
Work adjustment
-attendance
-punctuality
-initiative
-responsibility
-flexibility
-follows directions
-persistence

(continued)

Table 5 (continued)

Interpersonal
-rapport with co-workers
-rapport with supervisor
-acceptance of criticism
-control of inappropriate behaviors
Work Performance Skills
-speed
-work quality
-efficiency
-independence
-self-monitoring ability
-productivity
Additive Measures
-work adjustment skills
-interpersonal skills
-work performance skills
-all work skills
Work history (months at last job and months at longest job)
Time in hospital (% of life time)
DEPENDENT
Highest level achieved (00-09)
Has job at closing? (yes or no)

discriminant analyses. Most of these, as stated previously, were obtained directly from agency records. A few, however, are derived from other variables. For instance, as the table indicates, the work skills are summed, first of all, into three subgroups (work adjustment, interpersonal skills and work performance). These groupings were made by the author, on the basis of review of the literature and differ very slightly from the agency's own subgroupings. Finally, the scores from all of the work skills were summed to arrive at a variable called work skill. A demographic variable called work history was created by summing the number of months at members' longest jobs and at their most recent jobs (both of these refer to jobs prior to coming to Thresholds). It was felt that combining these two variables into a single one would provide the best single measure of how long members have worked in the past. Length of previous employment, rather than pay status or time status of previous jobs, is most often used in the literature as the measure of work history. Time in Hospital provides a measure of chronicity, since it is calculated as a percentage of members' lives spent in the hospital.

The first and most important aspect of data analysis was to assess the relationship between the demographic and work skill predictor variables and the outcome variable of highest vocational level achieved. Tables 6 and 7 summarize the results of the stepwise multiple regression procedure used to measure these relationships. Each of these two tables summarizes the multiple regression results for half of the total subject pool. Recall that two groups are used for purposes of cross-validation. As the tables indicate, many of the independent variables were not even

Table 6

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved (Group 1)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*	*	*	*	*	*
	Sex male (D)	.0346	2.795(1,78)	.099	.1860	2.795(1,78)	.099
	Race-Caucasian (D)	*	*	*	*	*	*
	Never married (D)	*	*	*	*	*	*
	Married or living as married (D)	*	*	*	*	*	*
	Grade level	*	*	*	*	*	*
2	Income-job or savings (D)	*	*	*	*	*	*
	Income-government sub (D)	*	*	*	*	*	*
	Income-relatives (D)	*	*	*	*	*	*
	Residence-institution (D)	*	*	*	*	*	*
	Residence-relatives (D)	*	*	*	*	*	*
	Residence-supv. living (D)	*	*	*	*	*	*
	Job primary reason (D)	*	*	*	*	*	*
3	Months at longest job	*	*	*	*	*	*
	Has workshop experience (D)	.0309	2.328(1,73)	.131	.1758	2.328(1.73)	.131
	Working at intake (D)	*	*	*	*	*	*
4	Months at last job	*	*	*	*	*	*
	Last job paid (D)	*	*	*	*	*	*
	Last job part-time (D)	*	*	*	*	*	*
	Quit last job (D)	*	*	*	*	*	*
	Laid off last job (D)	*	*	*	*	*	*

(continued)

Table 6 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	Number of hospitalizations	*					
	Total monts in hospital	*					
	Age of first hospitalization	*					
	Gas rating	.1402	4.727(1,29)	.038	.3744	4.727(1,29)	.038
6	Persistence	.1831	15.93 (1,71)	0.000	.4279	15.91 (1,71)	0.00
	Attendance	.2638	7.678(2,70)	.007	.2974	12.54 (2,70)	0.00
	Follows directions	.2976	3.315(3,69)	.073	.2250	9.74 (3,69)	0.00
	Responsibility	*					
	Punctuality	*					
	Flexibility	*					
	Initiative	*					
7	Rapport with supervisor	.1272	10.49 (1,72)	.002	.3566	10.49(1,72)	.002
	Rapport with co-workers	*					
	Accepts criticism	*					
	Controls inappropriate behavior	*					
8	Productivity	.1837	16.43 (1,73)	0.00	.4286	16.43(1,73)	0.00
	Speed	*					
	Work quality	*					
	Efficiency	*					
	Independence	*					
	Self monitoring	*					
9	Work adjustment Σ	.2544	25.60(1,75)	0.00	.5044	25.60(1,75)	0.00
	Interpersonal Σ	*					
	Work perform Σ	*					
	Has work experience (D)	*					

(continued)

Table 6 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
10	Work skill Σ	.3023	26.43 (1,61)	0.00	.5498	26.43(1,61)	0.000
	Work history Σ	*					
	Time in hospital	*					

*variable did not meet entry criteria of $p < .15$.

Table 7

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved (Group 2)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*					
	Sex male (D)	*					
	Race - Caucasian (D)	.0457	3.687(1,77)	.059	.2138	3.687(1,77)	.059
	Never married (D)	*					
	Married or living as married (D)	*					
	Grade level	*					
2	Income - job or savings (D)	.0547	4.459(1.77)	.038	.2340	4.459(1,77)	.038
	Income - government sub (D)	*					
	Income - relatives (D)	*					
	Residence - institution (D)	*					
	Residence - relatives (D)	*					
	Residence - supervising (D)	*					
	Job - primary reasor (D)	*					
3	Months at longest job	*					
	Has workshop experience (D)	.0569	4.222(1,70)	.044	2.385	4.222(1,70)	.044
	Working at intake (D)	*					
4	Months at last job	*					
	Last job part-time(D)	*					
	Last job paid (D)	*					
	Quit last job (D)	*					
	Laid off last job (D)	*					

(continued)

Table 7 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	No. of hospitalizations	*					
	Total months in hospital	*					
	Age at first hospitalization	*					
	Gas rating	*					
6	Flexibility	.1142	9.286(1,72)	.003	.3380	9.286(1,72)	.003
	Attendance	*					
	Punctuality	*					
	Initiative	*					
	Responsibility	*					
	Persistence	*					
	Follows direction	*					
7	Accepts criticism	.0869	6.758(1,71)	.011	.2948	6.758(1,71)	.011
	Co-worker rapport	*					
	Supervisor rapport	*					
	Controls inapprobiate behavior	*					
8	Efficiency	.1309	10.55(1,70)	.002	.3618	10.55(1,70)	.002
	Speed	*					
	Work quality	*					
	Independence	*					
	Self-monitoring	*					
	Productivity	*					
9	Has work experience (D)	.1074	8.90(1,74)	.004	.3278	8.90(1.74)	.004
	Interpersonal Σ	.1502	3.675(2,73)	.059	.2188	6.452(2,73)	.003
	Work attitude Σ	*					
	Work performance Σ	*					

(continued)

Table 7 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
10	Work skill Σ	.0792	5.072(1,59)	.028	.2814	5.072(1,59)	.028
	Work history Σ	*					
	Time in hospital	*					

*Did not meet entry criterion of $p < .15$.

entered into a multiple regression equation because they did not even meet the entry criterion of $p \leq .15$. Surprisingly and disappointingly, none of the demographic variables, including work history variables, cross-validated as significant ($p < .05$) predictors of vocational success. The overall summed work skill score did cross-validate as a significant predictor ($F(1,61) = 26.43$, $p<.001$ and $F(1,59) = 5.0722$, $p<.05$) but none of the individual work skills did so. The summed work skill score predicted 30% in one group and 8% in the other, of the total variance in highest level achieved in the Thresholds program.

In order to assess the contribution of demographic variables to work skills, another series of stepwise multiple regression equations was performed. Tables 8 and 9 summarize these results. No demographic variables cross-validated as significant predictors of work skills.

Another measure of vocational success used in this study is whether or not the person had a job at the time of closing. At the time of data collection, only 70 members were closed. A series of stepwise discriminant analyses was performed to see which variables might predict which group a given member who has been closed will belong to: closed with a job or closed without a job. As Tables 10 and 11 show, no demographic or work skill variables cross-validated as significant predictors of whether or not a member who was closed had a job (and therefore can be assumed to have been successfully closed).

Given the disappointing nature of the results, some additional analyses were tried. It has already been pointed out that while the overall job skill score cross-validated as a significant predictor of vocational success, none of the individual skills did so; a few were

Table 8

Stepwise Multiple Regression Analysis of Demographic Variables on Work Skill (Group 1)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*					
	Sex male (D)	*					
	Race-caucasian (D)	*					
	Never married (D)	*					
	Married or living as married	*					
	Grade level	.0587	4.802(1,77)	.031	.2423	4.802(1,77)	.031
2	Income-job or savings (D)	*					
	Income-govt. sub (D)	*					
	Income-relatives (D)	*					
	Residence-relatives (D)	*					
	Residence-supv.living (D)	*					
	Residence-institution (D)	.0959	4.777(1,78)	.032	-.2568	4.084(1,78)	.021
	Job is primary reason (D)	.0398	3.235(2,77)	.076	.1996	3.235(2,77)	.076
3	Months at longest job	.0770	2.365(1,78)	.128	.1771	3.005(1,78)	.056
	Has workshop experience (D)	.0467	3.578(2,77)	.063	-.2161	3.578(2,77)	.063
	Working at intake (D)						
4	Months at last job	*					
	Last job paid (D)	*					
	Last job part-time (D)	*					
	Quit last job (D)	*					
	Laid off last job (D)	*					

(continued)

Table 8 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	No. of hospitalizations	*					
	Total months in hospital	*					
	Age at first hospitalization	*					
	Gas rating	*					
6	Work history	*					
	Times in hospital	*					

*Did not meet entry criterion of p <.15.

Table 9

Stepwise Multiple Regression Analysis of Demographic Variables on Work Skill (Group 2)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*					
	Sex male (D)	*					
	Race-Caucasian (D)	*					
	Never married (D)	*					
	Married or living as married	*					
	Grade level	*					
2	Income-govt. sub (D)	*					
	Income-relatives (D)	*					
	Income-job/savings (D)	.0667	5.364(1,75)	.023	.2584	5.364(1,75)	.023
	Residence-relatives (D)	.1191	4.397(2,74)	.039	.2295	5.002(2,74)	.0009
	Residence-instution (D)	*					
	Residence-supv. living (D)	*					
	Job primary reason (D)	*					
3	Months at longest job	*					
	Has workshop experience (D)	*					
	Working at intake (D)	.0480	3.427(1,68)	.068	.2191	3.427(1,68)	.068
4	Months at last job (D)	*					
	Last job paid (D)	.0323	2.205(1,66)	.142	.1798	2.205(1,66)	.142
	Last job part-time (D)	*					
	Quite last job (D)	*					
	Laid off last job (D)	*					

(continued)

Table 9 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	No. of hospitalizations	*					
	Total months in hospital	*					
	Age at first hospitalization	*					
	Gas rating	*					
6	Work history Σ	*					
	Time in hospital Σ	*					

*Did not meet entry criterion at $p < .15$.

Table 10

Stepwise Discriminant Analysis for Job at Closing (Group 1)

EQUATION	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	p
1	Age	*		
	Sex Male (D)	*		
	Race caucasian (D)	*		
2	Never married (D)	*		
	Married or living as married (D)	*		
	Grade level	.5714	4.500 (1,60)	.0781
3	Income job or savings (D)	*		
	Income government sub. (D)	*		
	Income-relatives	*		
4	Residence-institution (D)	*		
	Residence-with relatives (D)	*		
	Residence-supv. living (D)	.5714	4.500 (1,60)	.0781
	Job primary reason (D)	*		
5	Months at longest job	*		
	Has workshop experience (D)	*		
	Working at intake (D)	*		
6	Months at last job	*		
	Last job paid (D)	*		
	Last job part-time (D)	*		
	Quit last job (D)	*		
	Laid off last job (D)	*		

(continued)

Table 10 (continued)

EQUATION	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	P
7	No. of hospitalizations	*		
	Total months in hospital	*		
	Age at first hospitalization	.5176	5.592 (1,60)	.0559
	Gas rating	.3108	5.543 (2,50)	.0539
8	Responsibility	*		
	Flexibility	*		
	Follows directions	*		
	Persistence	*		
9	Attendance	*		
	Punctuality	*		
	Initiative	*		
10	Rapport with co-workers	*		
	Rapport with supervisor	*		
	Accepts criticism	*		
	Controls inappropriate behavior	*		
11	Speed	*		
	Work quality	*		
	Efficiency	*		
12	Independence	*		
	Self monitors	*		
	Productivity	*		

(continued)

Table 10 (continued)

EQUATION	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	p
13	Work adjustment Σ	*		
	Interpersonal Σ	*		
	Work pert? Σ	*		
14	Work history Σ	*		
	Work skill Σ	*		
	Time in hospital	*		

*Did not meet entry criterion of $p < .15$.

Table 11

Stepwise Discriminant Analysis for Job at Closing (Group 2)

ANALYSIS	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	P
1	Age	*		
	Sex male (D)	*		
	Race caucasian (D)	*		
2	Never married (D)	*		
	Married or living as married (D)	*		
	Grade level	*		
3	Income-job or savings (D)	*		
	Income-gov. sub. (D)	*		
	Income-relatives	*		
4	Residence-institution	*		
	Residence-with relatives (D)	*		
	Residence-supv. living (D)	*		
	Job primary reason (D)	*		
5	Months at longest job	*		
	Has workshop experience (D)	*		
	Working at intake (D)	*		
6	Months at last job	*		
	Last job paid (D)	*		
	Last job part-time (D)	.5500	7.364 (1,90)	.0239

(continued)

Table 11 (continued)

ANALYSIS	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	p
6	Quit last job (D)	*		
	Laid off last job (D)	.2444	12.364 (2,80)	.0036
7	No. of hospitalizations	*		
	Total months in hospital	*		
	Age of first hospitalization	*		
	Gas rating	*		
8	Responsibility	*		
	Flexibility	*		
	Follows directions	*		
	Persistence	*		
9	Attendance	*		
	Punctuality	*		
	Initiative	.7756	2.603 (1,90)	.1411
10	Rapport with co-workers	*		
	Rapport with supervisor	*		
	Accepts criticism	*		
	Controls inappropriate behavior	*		
11	Speed	*		
	Work quality	*		
	Efficiency	*		
12	Independence	*		
	Self monitors	*		
	Productivity	*		

(continued)

Table 11 (continued)

ANALYSIS	INDEPENDENT VARIABLE	WILK'S LAMBDA	EQUIVALENT F	p
13	Work adjustment Σ	*		
	Interpersonal Σ	*		
	Work performance Σ	*		
14	Work history Σ	*		
	Work skill Σ	*		
	Time in hospital	*		

*Did not meet entry criterion of $p < .15$.

significant ($p<.05$) in one group, others in another group. One of the goals of this study was to see which specific work skills are most predictive of vocational success. Examination of the correlation matrices between the various work skill variables revealed strong inter-correlations between them. Looking at the the raw data suggested a strong "halo" effect: it appeared that raters tended to give members the same, or very similar scores on all of the work skill variables.

After examining the raw data, the author found 59 cases in which there seemed to be a bit more variability in the ratings from skill-to-skill. A difference of at least two points between the highest rating and the lowest one was the criterion used for inclusion in this group of cases. A series of multiple regression equations was performed on these (randomly divided into two groups) to see if any individual work skills would emerge as significant ($p<.05$) predictors of vocational level. As Table 12 and 13 show, persistence cross-validated as significant.

A possible source of difficulty in the present study is the point at which the outcome data was collected (July, 1984). Based on his or her intake date, the maximum amount of time a member could have been involved in Thresholds' program at the time data was collected was a year and a half, and the minimum amount was six months. It was felt that this would be an adequate amount of time to give members a chance to make some progress in the program. However, given the number of members who never even made it out of crew, this assumption may have been wrong. Perhaps collecting data at a later point in time would have given more members a chance to make progress and improved the results.

Table 12

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved Using Only those Cases that Show Variability** Across Work Skill Ratings (Group 1).

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST FOR BETA	p
1	Attendance	*					
	Punctuality	.1337	4.167(1,27)	.051	.3656	4.167(1,27)	.051
	Initiative	*					
2	Responsibility	*					
	Flexibility	*					
	Follows direction	*					
	Persistence	.2281	7.388(1,25)	.012	.4776	7.388(1,25)	.012
3	Rapport with co-workers	*					
	Rapport with supervisor	*					
	Accepts criticism	*					
	Controls inappropriate behavior	*					
4	Speed	*					
	Work quality	*					
	Efficiency	*					
5	Independence	*					
	Self monitors	*					
	Productivity						

(continued)

Table 12 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST FOR BETA	p
6	Work attitude Σ	*					
	Interpersonal Σ	*					
	Work performance Σ	.1328	4.135(1,27)	.052	.3644	4.135(1,27)	.052

*Did not meet entry criterion of $p < .15$.

**At least a two-point difference between the lowest and highest rating.

Table 13

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved using only those Cases that Show Variability** Across Work Skill Ratings (Group 2).

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Attendance	*					
	Punctuality	*					
	Initiative	.3148	12.866(1,28)	.001	.5611	12.866(1,28)	.001
2	Responsibility	*					
	Flexibility	*					
	Follow directions	*					
	Persistence	.3287	13.221(1,27)	.001	.5733	13.221(1,27)	.001
3	Rapport with co-workers	*					
	Rapport with supervisors	*					
	Accepts criticism	*					
	Controls inappropriate behavior	.1577	5.240(1,28)	.030	.3971	5.240(1,28)	.030
4	Speed	*					
	Work quality	.1765	6.00 (1,28)	.021	.4201	6.00 (1,28)	.021
	Efficiency	*					
5	Independence	.2609	9.532(1,28)	.005	.5108	9.532(1,28)	.021
	Self monitors	*					
	Productivity	*					

(continued)

Table 13 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
6	Work attitude Σ	.3151	12.879(1,27)	.001	.5613	12.879(1,27)	.001
	Interpersonal Σ	*					
	Work performance Σ	*					

*Did not meet entry criterion of $p < .15$.

**At least a two point difference between the lowest and highest ratings.

In order to see if this might be the case, outcome data on the highest vocational level achieved was re-collected in October of 1986, over two years after the first outcome data was collected. At this point, each member would have had the opportunity to have been in the program a minimum of two years and 10 months. Of course, many of them will have been closed by this time. Table 14 summarizes the frequencies for each level of the outcome measure. There remains a large number of members who never made it out of crew. However, comparison with Table 4 (the frequencies from the first data collection) shows a much larger number of members who made it to their own jobs by October of 1986.

This re-collected data was reanalyzed using the same statistical procedure and again, the sample was split in half for cross-validation purposes. Tables 15 and 16 summarize the results of the stepwise multiple regression equations. Again, the summed work skill score cross-validated as a significant predictor of vocational outcome in the program ($F(1,62)=31.93$, $p<.000$ and $F(1,59)=4.462$, $p<.05$).

This time, the ability to accept criticism, one of the interpersonal work skills cross-validated as a significant predictor of highest vocational level ($F(1,62)=7.42$, $p<.01$ and $F(1,71)=8.886$, $p<.01$). No other individual work skills cross-validated as significant predictors of the outcome variable. Also, no demographic variables achieved such results.

Originally, the plan was to put all the cross-validated significant predictor variables together in one multiple regression equation. Obviously, not enough variables cross-validated to make this worth doing.

Table 14

Frequencies of Vocational Outcome Data (recollected in October of 1986).

	HIGHEST VOCATIONAL LEVEL ACHIEVED	N	%
00	Never got off crew	49	30
01	Got group placement - left for negative reason	15	9
02	Got a group placement - left for a neutral reason	9	5
03	Got a group placement - left for positive reason	16	10
04	Got an individual placement - left for a negative reason	6	4
05	Got an individual placement - left for a neutral reason	1	.5
06	Got an individual placement - left for a positive reason or kept it	4	2
07	Got own job - left it for a negative reason	21	13
08	Got own job - left it for a neutral reason	1	.5
09	Got own job - left it for a positive reason or kept it	39	24
99	(Missing)	(3)	(2)

Table 15

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved Using Recollected Outcome Data.

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*					
	Sex male (D)	*					
	Race caucasian (D)	*					
	Never married (D)	*					
	Married or living as married (D)	*					
2	Income-job/savings (D)	*					
	Income-gov. subsidy (D)	*					
	Income-relatives (D)						
	Residence-institution(D)	.0287	2.367(1,80)	.128	-.1695	2.367(1,80)	.128
	Residence-relatives (D)	*					
	Res-supv. living	*					
	Job is primary reason	*					
3	Months at longest job	*					
	Has workshop exp. (D)	*					
	Working at intake (D)	*					
4	Months at last job	*					
	Last job-paid (D)	*					
	Last job part-time(D)	*					
	Quit last job (D)	*					
	Laid off last job (D)	*					

(continued)

Table 15

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	No. of hospitalizations	*					
	Total months in hospital	*					
	Age at first hosp.	*					
	Gas rating	*					
6	Persistence	.2217	20.504(1,72)	0.000	.4708	20.504(1,72)	0.000
	Attendance	.3202	10.298(2,71)	0.002	.3287	16.725(2,71)	0.000
	Follows directions	.3581	4.133(3,70)	0.046	.2384	13.020(3,70)	0.000
	Responsibility	*					
	Punctuality	*					
	Flexibility	*					
	Initiative	*					
7	Accepts criticism	.0979	7.921(1,73)	.006	.3129	7.921(1,73)	.006
	Rapport with co-workers	*					
	Rapport with superior	*					
	Controls inap. behavior	*					
8	Productivity	.2987	30.176(1,74)	0.000	.5382	30.716(1,74)	0.000
	Speed	*					
	Work quality	*					
	Efficiency	*					
	Independence	*					
	Self-monitors	*					

(continued)

Table 15

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
9	Work adjustment Σ	.3361	38.482(1,76)	0.000	.5798	38.482(1,76)	0.000
	Interpersonal Σ	*					
	Work performance Σ	*					
	Has work experience (D)	*					
10	Work skill Σ	.3399	31.926(1,62)	0.000	.5830	31.926(1,62)	0.000
	Work history Σ	*					
	Time in hospital	*					

*Did not meet entry criterion of $p < .15$.

Table 16

Stepwise Multiple Regression Analysis for Highest Vocational Level Achieved Using Recollected Outcome Data (Group 2)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
1	Age	*					
	Sex-male (D)	*					
	Race-caucasian	.0425	3.420(1,77)	.068	.2062	3.420(1,77)	.068
	Never married (D)	*					
	Married or living as married	*					
2	Income-job/savings (D)	*					
	Income-gov. sub (D)	.0348	2.774(1,77)	.100	-.1865	2.774(1,77)	.100
	Income-relatives (D)	*					
	Residence-institution(D)	*					
	Residence-relatives (D)	*					
	Residence-supv. living (D)	*					
	Job-primary reason (D)	*					
3	Months at longest job	*					
	Has workshop experience	.0583	4.332(1,70)	.041	-.2414	4.332(1,70)	.041
	Working at intake (D)	*					
4	Months at last job	.0347	2.444(1,68)	.123	.1862	2.444(1,68)	.123
	Last job-paid (D)	*					
	Last job part-time (D)	.0775	3.110(2,67)	.082	.2095	2.815(2,67)	.067
	Quit last job (D)	*					
	Laid off last job (D)	*					

(continued)

Table 16 (continued)

EQUATION	INDEPENDENT VARIABLE	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
5	No. of hospitalizations	*					
	Total months in hospital	*					
	Age at first hospitalization	*					
	Gas rating	*					
6	Responsibility	.0885	6.988(1,72)	.010	.2974	6.988(1,72)	.010
	Attendance	*					
	Punctuality	*					
	Initiative	*					
	Persistence	*					
	Flexibility	*					
	Follows direction	*					
7	Accepts criticism	.1112	8.886(1,71)	.004	.3335	8.886(1,71)	.004
	Co-worker rapport	*					
	Rapport with supvisor	*					
	Controls inap. behavior	*					
8	Efficiency	.0974	7.550(1,70)	.008	.3120	7.550(1,70)	.008
	Speed	*					
	Work quality	*					
	Independence	*					
	Self monitors	*					
	Productivity	*					
9	Work adjustment Σ	*					
	Interpersonal Σ	.0852	6.889(1,74)	.011	.2918	6.889(1,74)	.011
	Work performance Σ	*					
	Has work experience (D)	*					

Table 16 (continued)

EQUATION	INDEPENDENT VARIABLW	R^2	F TEST OF UNIQUE VARIANCE	p	BETA	F TEST OF BETA	p
10	Work skill Σ	.0703	4.462(1,59)	.039	.2652	4.462(1,59)	.039
	Work history Σ	*					
	Time in hospital	*					

*Did not meet entry criterion of $p < .15$.

CHAPTER VI

DISCUSSION

This study represents an exploratory effort at finding which demographic and work skill variables are the best predictors of vocational outcome. In addition to this exploratory aspect, three hypotheses were advanced: 1) that work history would predict vocational success 2) that work history would explain more variance in vocational success than age, race, gender or education. 3) that work skill would predict vocational success.

The only experimental hypothesis that was supported by the results of this study was that work skill would predict vocational success. The sum total of the work skill scores did indeed predict the highest level a member achieved in the Thresholds program. Contrary to the findings of most of the cited literature, the results of this study did not suppport the first hypothesis that work history is a significant predictor of vocational outcome. The second hypothesis, that variance attributed to age, gender, race and education would not be as great as that due to differences in work history, could not be tested, since none of these variables cross-validated as significant predictors of vocational outcome. In addition, no other demographic variables cross-validated as significant predictors of vocational outcome.

Regarding the demographic independent variables, the fact that age, gender, race and education did not emerge as significant predictors

of vocational success is not really surprising, given the inconsistent findings in the literature regarding these variables. Certainly, many other studies have not found them to be significant predictors of success.

More disappointing are the lack of positive results for work history. None of the individual work history variables cross-validated as significant predictors of vocational outcome, and neither did a measure that combined two of them. These results do not match the findings of the majority of cited studies: work history is usually very consistently positively related to vocational outcome. In particular, the amount of time a person has worked (in one job or overall) is usually quite a good predictor, but in this study that was not the case. Perhaps this could be seen as an optimistic finding, i.e., that a poor work record can be overcome. More likely, some methodological factor is playing a role in this outcome.

Employment history, like all the demographic variables in this study was self-report. There is always a potential for inaccuracy with this type of information, but as there was no reasonable way of confirming the information members gave, it was the best that was available.

A possibly more serious problem stems from the way the data was collected. This study took a group of people who began the Thresholds program during a particular two-year period and looked at their vocational outcome at a single, later, arbitrary point in time. It was felt, at the time of data collection, that even though members would have been involved in the program for different amounts of time, each of them would have had an adequate chance to make reasonable progress.

However, there is no guarantee, within the current design, that what was being measured was the person's highest vocational level. One possibly better way of executing the study might have been to work back from closings rather than forward from intakes. All of the information about the person's achievements at Thresholds would be available and, in this way, one could be sure that the highest vocational level achieved at Thresholds was being measured.

Another way of handling this problem was used in the current study, namely the re-analysis based on outcome data collected more than two years after the initial data collection. This was not part of the original research design, but it was felt to be necessary after considering the uninformative initial results. By the time of the second data collection, each member would have had the opportunity to be involved in the program for at least two-and-a-half years, although many certainly were closed before then. There still are no guarantees that a member's highest level was obtained, but the chances of it are much improved.

Again, however, none of the employment history variables cross-validated as significant predictors of vocational outcome. Even though it is extremely likely that the outcome measure now indeed represents the person's highest level of achievment at Thresholds, the results regarding job history do not agree with the majority of the literature on this subject.

Perhaps this is partly due to the fact that subjects in this study are different, in some important ways, from the subjects in many of the referenced studies. For one thing, the average age of subjects in this study is only about 26. A substantial portion of the literature uses an

older, often a VA, population. The average subject in this study finished high school (or went slightly beyond), was first hospitalized by age 21 and was admitted into the hospital three or four separate times. Given all of this, there does not seem to have been that much time for steady work. Also, since half of the subjects live with relatives, there may have been less motivation to work prior to coming to Thresholds: their families may have been willing to tolerate their not working. The subjects in the current study, therefore, may have had less chance to develop a work history than subjects in other studies, which makes an effect for work history harder to find. The possibility mentioned earlier, that the lack of effect for work history is an optimistic finding may indeed be true for this population: the disadvantage of not having much of a work history may be overcome by a young person, since other factors may be working in his or her favor. Just exactly what these factors might be would be an interesting area for future research. One possibility that comes to mind is that vocational counselors and employers might be more optimistic about a young person's chances for success, whether or not he or she has had much work experience in the past. They may therefore put more effort into helping them, and may be more willing to take a chance on hiring them.

Differences in subject characteristics are not the only thing that sets this study apart from much of the referenced literature. There are also differences in the outcome measures, which might also help explain why this study did not replicate the widely-found effect for work history. In this study, success is defined as success <u>in</u> the program, while most other studies measure success at some follow-up point. It is pos-

sible that an effect for work history would have shown up if vocational success was measured at follow-up and was defined as having worked for a specific length of time, or some such criterion. However, I chose to use institutional performance as my outcome variable for reasons which were defined earlier, namely the need to know the factors associated with success in a rehabilitation program, in order to best identify the people who will profit from such programs and to provide extra remediation to those who are not likely to do so well.

The results of this study suggest that work history is not associated with institutional performance, i.e., progress in the Thresholds program. It may be that previous success in the marketplace improves one's chances for future success there, but is not so important for success in a rehabilitation program.

The discussion thus far has focused mainly on the outcome variable of highest vocational level achieved. Whether or not the member had a job at closing was also used. Only 70 out of the 164 were closed at the time of initial data collection. No demographic or work skills variables cross-validated as significant predictors of whether or not a member who was closed had a job at closing. The reason for this may, in part, have to do with statistical power. Seventy is not really a large enough group to divide in half for purposes of cross-validation. In order to get a fair idea of the utility of demographic and work skill variables as predictors of whether or not a person will be closed successfully (i.e., with a job) a study would have to be made of a larger sample of closed cases. Also, environmental factors likely play a role here. In particular, the state of the economy and the job market in

general must be taken into account. A particularly competitive job market is likely to hurt the disabled most of all, and it may be difficult, in such a market, to get a meaningful picture of who is likely to be closed successfully. If comparisons are being made, in some future study, it would be be important to take these economic factors into account, to make sure that they are operating equally for all subjects.

Moving on to the clinical or work skill variables, the finding that the summed work skill score is a significant predictor of highest vocational level is particularly strong. This result cross-validated in the initial outcome data as well as the later secondary analysis.

It was hoped that by means of multiple regression analysis, this study would shed some light on the question of which work skill variables would have the strongest significant relationship to vocational success. The initial analysis yielded no significant results for any individual work skills or any of the three subgroupings (work adjustment, interpersonal and work performance). The fact that little was learned about which specific work skills are most related to vocational success is probably due to high correlations between the work skills. Members who receive high ratings on one skill are more likely to get high ratings on the rest. It's possible that people who are good in one area of work skills are likely to be good in other areas as well. It's also possible that a "halo" effect is taking place: in other words examiners' ratings of the person on each skill are biased by their ratings on the other skills. In either case, there is little variability between the ratings of different skills, making it impossible to do a meaningful analysis that tries to differentiate between them.

An analysis was made of just those cases that showed some variability between ratings of different skills. This analysis showed persistence to be related to vocational outcome. This analysis was completely post-hoc and should not be given the same interpretive weight as other findings. On the other hand, it should be pointed out that the already small sample (59), further reduced by splitting the sample for cross-validation, decreased the statistical power available, thereby making it more difficult for this finding to emerge.

In the re-analysis, with the re-collected outcome data, the ability to accept criticism (one of the interpersonal work skills) cross-validated as a significant predictor of the outcome measure. It was the only individual skill to do so. Having the ability to accept criticism suggests that some other strengths are likely in place. The person who can accept criticism likely has at least a moderate level of self-confidence, ego strength, social skill and willingness to learn. Therefore, it seems reasonable that this skill would be the one to emerge as a significant predictor of vocational success.

When one considers that persistence emerged as significant in an earlier analysis, a picture of the successful vocational rehabilitation client begins to emerge as one who can likely make a good impression on a supervisor by being willing to learn. It seems that attitude is more important than ability in this regard. Furthermore, it would seem important to assist vocational rehabilition clients in becoming less sensitive to criticism, stressing that it is a normal part of any job. Rather than hearing criticism as a personal attack, vocational rehabilitation counselors might encourage their clients to see its positive, educational value, and to persist in their efforts.

The finding that the higher a member is rated on work skill, the greater his or her level of success in the program is likely to be, is not a particularly earth-shattering one. Another way of stating this would be to say: "the better you do at Thresholds, the more successful you'll be at Thresholds". As simple as this sounds, it nevertheless has important ramifications for the Thresholds program as well as other such programs. It tells the crew supervisors that their ratings of members are meaningful; those who do well on crew are indeed more likely to do well at higher levels. It tells members that crew is an important form of preparation for higher vocational levels. The work skills their crew supervisors are helping them develop will serve them well throughout their progression in the program. What is needed, in future studies, is to link this institutional success with later, "real world" success.

A final aspect of the study was an attempt to see if any demographic variables would predict work skills. None of the demographic variables, including the work history variables, cross-validated as being significantly related to work skill. Therefore, no conclusions can be drawn as to which members are more likely to display the skills needed for success.

The purpose of this study was not to evaluate the success of Thresholds as a program, but rather to suggest <u>with whom</u> it is most successful. Nevertheless, it should be noted that the majority of people do make progress in the Thresholds program. At the time of the second collection of outcome data, almost one quarter of the members got their own jobs and either kept them or changed for a positive reason. Sixty

three percent of the members did manage to move out of crew, and many of them reached a level at which they were able to perform successfully. What is not clear is how these people would have done if they had been placed immediately into a job setting, without any sort of vocational rehabilitation. One third of the people never got out of crew, suggesting that there are some people who may need even more intensive intervention, or, sadly, may never hold a job.

While the findings of this study were not precisely what was expected, some worthwhile results did emerge. The utility of the Job Report Form used by Thresholds staff was certainly supported. The fact that the overall work skill score, derived from this form, was a better predictor of vocational outcome than the individual skill ratings reflects well on the form's internal consistency. The total picture of the person's work skills that is derived from the summed work skill score is, in general, more meaningful than each of its parts. This study suggests that when members display good work skills early on in their involvement with Thresholds, the staff can feel confident that they will make good use of the program and should be given as many opportunities as possible to test themselves at more demanding levels. On the other hand, those members who show a low level of work skill need some remedial assistance on developing these very basic abilities before they are moved on to higher levels. Knowing this early on in the program might save some time and make the best use of available resources. Perhaps members who show an initial high level of skill can be moved more quickly through the program while those with less ability may need more concentrated remedial assistance.

The results of this study only go so far, however. Vocational success in the "short run" was the variable of interest here, but short-terms success does not ultimately mean very much unless it is related to long-term success. Future studies in the area should seek to obtain reliable follow-up information in addition to data on institutional functioning in order to see if this institutional succcess correlates with later success. Perhaps it is at follow-up that the expected effects of one's work history will be seen: those members with stable work histories may be more likely to sustain the progress they made at Thresholds. It is also possible that for clients of programs such as Thresholds, work history may not be a significant predictor of success, even at follow-up. Should this prove to be the case, it may be that participation in the Thresholds program gives people enough of a work history; what they did premorbidly may be less important than the kind of rehabilitation opportunities they received. It may be that vocational rehabilitation programs can achieve good results with people, even if their work histories are limited, if they possess a certain basic level of work skills.

A better strategy for future studies of this type would probably be to work back from closed cases, perhaps comparing those who were closed successfully (i.e., with a job) to those who were closed unsuccessfully. It would be helpful to ascertain what factors affect the length of time a member needs to spend at Thresholds before he or she leaves with a job. This information could be very helpful in designing accelerated and remedial vocational rehabilitation programs, which might be a cost- effective solution for the future.

In any case, the area of vocational rehabilitation of chronic psychiatric patients remains an area in need of further research. It is important that future studies continue to focus, as this one did, on which clients are able to make the best use of currently available programs. It also would be important to further study successful vocational rehabilitation clients who came into a rehabilitation program without much of a work history, to see what, if anything, sets them apart from unsuccessful clients and those who were successful and also had a history of working in the past. In addition, studies that compare different programs' methods, as well as looking at the interactions between client characteristics and program characteristics would contribute important, and as yet widely uninvestigated, information.

REFERENCES

Acharya, W.A., Ekdawi, M.Y., Gallagher, L. & Glaister, B. (1982). Day hospital rehabilitation: A six-year study. Social Psychiatry. 17, 1-5.

Afifi, A.A. & Clark, V. (1984). Computer-Aided Multivariate Analysis. Belmont, Ca.: Wadworth.

Anthony, W.A. & Buell, G.J. (1974). Predicting psychiatric rehabilitation outcome using demographic characteristics: A replication. Journal of Counseling Psychology. 21, 421-422.

Anthony, W.A., Buell, G.J., Sharratt, S. & Althoff, M.E. (1972). The efficacy of psychiatric rehabilitation. Psychological Bulletin. 78, 447-456.

Anthony, W.A., Cohen, M.R. & Vitalo, R. (1978). The measurement of rehabilitation outcome. Schizophrenia Bulletin. 4, 365-383.

Anthony, W.A. & Farkas, M. (1982). A client outcome planning model for assessing psychiatric rehabilitation interventions. Schizophrenia Bulletin. 8, 13-38.

Anthony, W.A. & Jansen, M.A. (1984). Predicting the vocational capacity of the chronically mentally ill: Research and policy implications. American Psychologist. 39, 537-544.

Arzin, N.H., Flores, T. & Kaplan, S.J. (1975). Job-Finding Club: A group-assisted program for obtaining employment. Behavior Research and Therapy. 13, 17-27.

Arthur, G., Ellsworth, R.B. & Kroeker, D. (1968). Schizophrenic patient post-hospital community adjustment and readmission. Social Work. 13, 78-84.

Bachrach, L.L. (1982). Young adult chronic patients: An analytical review of the literature. Hospital and Community Psychiatry. 33, 189-197.

Banks, M.H. & Jackson, P.R. (1982). Unemployment and risk of minor psychiatric disorder in young people: Cross-sectional and longitudinal evidence. Psychological Medicine. 12, 789-798.

Bartol, K.M. & Manhardt, P.J. (1979). Sex differences in job outcome preferences: Trends among newly hired college graduates. Journal of Applied Psychology. 64, 477-482.

Beard, J.H., Malamud, T.J. & Rossman, E. (1978). Psychiatric rehabilitation and long-term rehospitalization rates: The findings of two research studies. Schizophrenia Bulletin. 4, 622-635.

Beard, J.H., Propst, R.N., & Malamud, T.J. (1982). The Fountain House model of psychiatric rehabilitation. Psychosocial Rehabilitation Journal. 5, 47-53.

Bendel, R.B. & Afifi, A.A. (1977). Comparison of stopping rules in forward stepwise regression. Journal of the American Statistical Association. 72, 46-53.

Berry, K.L. & Miskimins, R.W. (1969). Concept of self and post-hospital vocational adjustment. Journal of Consulting and Clinical Psychology. 33, 103-108.

Bidwell,G. (1969). Ego strength, self-knowledge and vocational planning of schizophrenics. Journal of Counseling Psychology. 16, 45-49.

Bolton, B. (1974). A factor analysis of personal adjustment and vocational measures of client change. Rehabilitation Counseling Bulletin. 18, 99-104.

Bolton, B. (1979). Rehabilitation Counseling Research. Baltimore: University Park Press.

Bolton, B. (1983). Psychosocial factors affecting the employment of vocational rehabilitation clients. Rehabilitation Psychology. 28, 35-44.

Bond, G.R., Dincin, J. & Setze, P. (1983). A summary of research findings at Thresholds. Unpublished manuscript. Thresholds, 1983.

Brief, A.P. & Aldag, R.J. (1975). Male-female differences in occupational attitudes within minority groups. Journal of Vocational Behavior. 6, 305-314.

Buell, G.J. & Anthony, W.A. (1973). Demographic characteristics as predictors of recidivism and post-hospital employment. Journal of Counseling Psychology. 20, 361-365.

Cheadle, A.J., Cushing, D., Drew, C. & Morgan, R. (1967). The measurement of the work performance of psychiatric patients. British Journal of Psychiatry. 113, 840-846.

Cheadle, A.J. & Morgan, R. (1972). The measurement of work performance of psychiatric patients: A reappraisal. British Journal of Psychiatry. 120, 437-441.

Ciardello, J.A. & Bingham, W.C. (1982). The career maturity of schizophrenic clients. Rehabilitation Counseling Bulletin. 26, 3-9.

Cohen, J. & Cohen, P. (1975). Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. New York: Wiley.

Connors, J.E., Wolkon, G.H., Haefner, D. & Stotsky, B.A. (1960). Outcome of a post-hospital rehabilitative treatment of mental patients as a function of ego strength. Journal of Counseling Psychology. 7, 278-282.

Deaux,K. (1979). Self evaluation of male and female managers. Sex Roles. 5, 571-580.

Deaux, K. & Ullman, J.C. (1983). Women of Steel. New York: Praeger.

Dincin, J. (1975). Psychiatric rehabilitation. Schizophrenia Bulletin. 13, 131-147.

Dincin, J. & Witheridge, T.F. (1982). Psychiatric rehabilitation as a deterrent to recidivism. Hospital & Community Psychiatry. 33, 645-650.

Distefano, M.K. & Pryer, M.A. (1970). Vocational evaluation and successful placement of psychiatric clients in a vocational rehabilitation program. American Journal of Occupational Therapy. 24, 205-207.

Douzinas, N. & Carpenter, M. (1981). Predicting the community performance of vocational rehabilitation clients. Hospital & Community Psychiatry. 32, 409-412.

Ellsworth, R.B., Foster, L., Childers, B., Arthur, G. & Kroeker, D. (1968). Hospital and community adjustment as perceived by psychiatric patients, their families and staff. Journal of Consulting and Clinical Psychology. Monographs. 32, (3. Pt. 2).

Endicott, J., Spitzer, R.L., Fleiss, J.L. & Cohen,J. (1976). The Global Assessment Scale: A procedure for measuring overall severity of psychiatric disturbance. Archives of General Psychiatry. 33, 766-771.

Ethridge, D.A. (1968). Pre-vocational assessment of the rehabilitation potential of psychiatric patients. American Journal of Occupational Therapy. 22, 161-167.

Florian, V. & Har-Even, D. (1984). The meaning of work: A comparison of rehabilitation client groups. Rehabilitation Counseling Bulletin. 28, 129-132.

Friedmeyer, M.H. (1985). Predicting vocational performance of chronic psychiatric patients using situational assessment ratings. Unpublished manuscript. Indiana University-Purdue University at Indianapolis.

Garrison, V. (1978). Social support systems of schizophrenic and non-schizophrenic Puerto Rican migrant women in New York city. Schizophrenia Bulletin. 4, 561-596.

Goldstein, J.M. & Caton, C.L.M. (1983). The effects of the community environment on chronic psychiatric patients. Psychological Medicine. 13, 193-199.

Goss, A.M. & Pate, K.D. (1967). Predicting vocational rehabilitation success for psychiatric patients with psychological tests. Psychological Reports. 21, 725-730.

Green, H.J., Miskimins, R.W. & Keil, E.C. (1968) Selection of psychiatric patients for vocational rehabilitation. Rehabilitation Counseling Bulletin. 11, 297-302.

Gregory, C.C. & Downie, M.N. (1968). Prognostic study of patients who left, returned and stayed in a psychiatric hospital. Journal of Counseling Psychology. 15, 232-236.

Griffiths, R. (1973). A standardized assessment of the work behavior of psychiatric patients. British Journal of Psychiatry. 123, 403-408.

Griffiths, R. (1974). Rehabilitation of chronic psychotic patients. Psychological Medicine. 4, 316-325.

Growick, B. (1979). Another look at the relationship between vocational and nonvocational client change. Rehabilitation Counseling Bulletin. 23, 136-139.

Growick, B. & McMahon, B. (1983). Characteristics of older successful VR clients. Journal of Applied Rehabilitation Counseling. 14, 46-48.

Gregory, C.C. & Downie, M.N. (1968). Prognostic study of patients who left, returned and stayed in a psychiatric hospital. Journal of Counseling Psychology. 15, 232-256.

Gurel, L. & Lorei, T.W. (1972). Hospital and community ratings of psychopathology as predictors of employment and readmission. Journal of consulting and clinical psychology. 34, 286-291.

Gurin, G.A. (1970). A National Attitude Survey of Trainees in MDTA Institutional Programs. Ann Arbor: Survey Research Center, The University of Michigan.

Hall, J.C., Smith, K. & Shimkunas, A. (1966). Employment problems of schizophrenic patients. American Journal of Psychiatry. 123, 536-540.

Jacobs, H., Kardashian, S., Krienbring, R.K., Ponder, R. & Simpson, A.R. (1984). A skills-oriented model for facilitating employment among psychiatrically disabled persons. Rehabilitation Counselling Bulletin. 28, 87-96.

Kemp, N.J. & Mercer, A. (1983). Unemployment, disability and rehabilitation centres and their effects on mental health. Journal of Occupational Psychology. 56, 37-48.

Kiesler, C.A. (1982). Psychology and mental health policy. In M. Hersen, A.E. Kazdin & A.S. Bellak (Eds.) The Clinical Psychology Handbook. New York: Pergamon Press.

Lamb, R. & Goertzel, V. (1972). The demise of the state hospital-- a premature obituary? Archives of General Psychiatry. 26, 489-495.

Lipton, H. & Kaden, S.E. (1965). Predicting the post-hospital work adjustment of married, male schizophrenics. Journal of Consulting Psychology. 29, 93.

Long, E., & Runck, B. (1983). Combating stigma through work for the mentally restored. Hospital and Community Psychiatry. 34, 19-20.

Lorei, T.W. (1967). Prediction of community stay and employment for released psychiatric patients. Journal of Consulting Psychology. 31, 349-357.

Lorei, T.W. & Gurel, L. (1973). Demographic characteristics as predictors of post-hospital employment and readmission. Journal of Consulting and Clinical Psychology. 40, 426-430.

Lowe, C.M. (1967). Prediction of post-hospital work adjustment by the use of psychological tests. Journal of Counseling Psychology. 14, 248-252.

Miskimins, R., Wilson, L., Berry, K., Oetting, E. & Cole, C. (1969). Person-placement congruence: A framework for vocational counselors. Personnel and Guidance Journal. 47, 789-793.

Moller, H., von Zerssen, D., Werner-Eilert, K. & Wuschenr-Stockheim, M. (1982). Outcome in schizophrenia and similar paranoid psychoses. Schizophrenia Bulletin. 8, 99-108.

Mosher, L.R., & Keith, S.J. (1979). Research on the psychological treatment of schizophrenia: A summary report. American Journal of Psychiatry. 136, 623-631.

Nie, N.H., Hull, C.H., Jenkins, J.C., Steinbrenner, K. & Bent, D.H. (1975). Statistical Package for the Social Sciences (manual). New York: McGraw-Hill.

Olshansky, S., Grob, S. & Ekdahl, M. (1960). Survey of employment experiences of patients discharged from 3 state mental hospitals during period 1951-1953. Mental Hygiene. 44, 510-521.

Parks, S.H. & Pilisuk, M. (1984). Personal support systems of former mental patients residing in board-and-care facilities. Journal of Community Pyschology. 12, 230-243.

Roessler, R., & Bolton, B. (1984). Employment patterns of former vocational rehabilitation clients and implications for rehabilitation practice. Rehabilitation Counselling Bulletin. 28, 179-187.

Schuler, R.S. (1975). Sex, organizational level and outcome importance: Where the differences are. Personnel Psychology. 28, 365-376.

Schwartz, C., Myers, J. & Astrachan, B. (1975). Concordance of multiple assessments of the outcome of schizophrenia. Archives of General Psychiatry. 32, 1221-1227.

Stotsky, B., & Weinberg, H. (1956). The prediction of the psychiatric patient's work adjustment. Journal of Counseling Psychology. 3, 3-7.

Strauss, J. & Carpenter, W. (1972). The prediction of outcome in schizophrenia. Archives of General Psychiatry. 27, 739-746.

Strauss, J. & Carpenter, W. (1974). The prediction of outcome in schizophrenia 2. Archives of General Psychiatry. 31, 37-42.

Sturm, I.E. & Lipton, H. (1967). Some social and vocational predictors of psychiatric hospitalization outcome. Journal of Clinical Psychology. 23, 301-307.

Summers, F. (1981). The effects of aftercare after one year. Journal of Psychiatric Treatment and Evaluation. 3, 405-409.

Taylor, F.R. (1963). The General Aptitude Test Battery as predictor of vocational readjustment by psychiatric patients. Journal of Clinical Psychology. 19, 130.

Tessler, R.C. & Manderscheid, R.W. (1982). Factors affecting adjustment to community living . Hospital and Community Psychiatry. 33 203-207.

Tessler, R.C., Miller, J.L. & Rossi, P.H. (1984). The chronically mentally ill in the community: What accounts for successful client functioning?
Research in Community and Mental Health. 4, 221-244.

Turkat, D. & Buzzell, V.M. (1983). Recidivism and employment rates among psychosocial rehabilitation clients. Hospital and Community Psychiatry. 34, 741-742.

Vash, C. (1982). Employment issues for women with disabilities. Rehabilitation Literature. 43, 198-207.

Walker, R. & McCourt, J. (1965). Employment experience among 200 schizophrenic patients in hospital and after discharge. American Journal of Psychiatry. 122, 316-319.

Warr, P. (1982). Psychological aspects of employment and unemployment. Psychological Medicine. 12, 7-11.

Watts, R. (1978). A study of work behavior in a psychiatric rehabilitation unit. British Journal of Clinical Psychology. 17, 85-92.

Watts, F. & Bennett, D. (1977). Previous occupational stability as a predictor of employment after psychiatric rehabilitation. Psychological Medicine. 7, 709-712.

Wessler, R.L. & Iven, D. (1970). Social characteristics of patients readmitted to a community mental health center. Community Mental Health Journal. 6, 69-74.

Wilson, T.L., Berry, L. & Miskimins, W.R. (1969). An assessment of characteristics related to vocational success among restored psychiatric patients. The Vocational Guidance Quarterly. 18, 110-114.

Wolkon, G.H., Karmen, M. & Tanaka, H.T. (1971). Evaluation of a social rehabilitation program for recently released psychiatric patients. Community Mental Health Journal. 7, 312-322.

Worrall, J.D. & Vandergoot, D. (1980). Indicators of nonsuccess for early vocational rehabilitation intervention. Rehabilitation Counselling Bulletin. 23, 282-290.

Worrall, J.D. & Vandergoot, D. (1982). Additional indicators of nonsuccess: A follow-up report. Rehabilitation Counselling Bulletin. 26, 88-93.

APPROVAL SHEET

The dissertation submitted by Mary A. Yerkes has been read and approved by the following committee:

Dr. Alan S. DeWolfe, Director
Professor, Psychology
Loyola University of Chicago

Dr. James E. Johnson
Associate Professor, Psychology
Loyola University of Chicago

Dr. John R. Shack
Associate Professor, Psychology;
Director, Applied Psychology
Loyola University of Chicago

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

4/14/87
Date

Alan S. DeWolfe, Ph.D.
Director's Signature